

CLAIMS

What is claimed is:

1. A method for producing a filamentous bacterium exhibiting reduced branching and fragment septation during growth, particularly growth in a liquid medium, said method comprising:

providing a filamentous bacterium, said filamentous bacterium lacking significant endogenous ssgA activity, with the capability of having or expressing heterologous SsgA-activity, which activity, in *Streptomyces griseus*, is encoded by an ssgA gene having at least the sequence:

1 ATGCGCGAGTCGGTTCAAGCAGAGGTCATGATGAGCTTCCTCGTCTCCGA
51 GGAGCTCTCGTTCCGTATTCCGGTGGAGCTCCGATACGAGGTCGGCGATC
101 CGTATGCCATCCGGATGACGTTCCACCTTCCCGGCGATGCCCCTGTGACC
151 TGGGCGTTCGGCCGCGAGCTGCTGCTGGACGGGCTCAACAGCCCGAGCGG
201 CGACGGCGATGTGCACATCGGCCCCACCGAGCCCGAGGGCCTCGGAGATG
251 TCCACATCCGGCTCCAGGTCGGCGCGGACCGTGCGCTGTTCCGGGCGGGG
301 ACGGCACCGCTGGTGGCGTTCCTCGACCGGACGGACAAGCTCGTGCCGCT
351 CGGCCAGGAGCACACGCTGGGTGACTTCGACGGCAACCTGGAGGACGCAC
401 TGGGCCGCATCCTCGCCGAGGAGCAGAACGCCGGCTGA.

2. A method for producing a filamentous bacterium exhibiting enhanced fragmentation during growth, particularly growth in a liquid medium, said method comprising:

providing a filamentous bacterium, wherein said filamentous bacterium lacks significant endogenous *ssgA* activity, with the capability of having or expressing heterologous *ssgA*-activity, which activity in *Streptomyces Griseus* is encoded by an *ssgA* gene having the sequence:

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1      ATGCGCGAGTCGGTTCAAGCAGAGGTCATGATGAGCTTCCTCGTCTCCGA
51     GGAGCTCTCGTTCCGTATTCCGGTGGAGCTCCGATACGAGGTCGGCGATC
101    CGTATGCCATCCGGATGACGTTCCACCTTCCCGGCGATGCCCCTGTGACC
151    TGGGCGTTCGGCCGCGAGCTGCTGCTGGACGGGCTCAACAGCCCGAGCGG
201    CGACGGCGATGTGCACATCGGCCCCGACCGAGCCCGAGGGCCTCGGAGATG
251    TCCACATCCGGCTCCAGGTCGGCGCGGACCGTGCGCTGTTCCGGGCGGGG
301    ACGGCACCGCTGGTGGCGTTCCTCGACCGGACGGACAAGCTCGTGCCGCT
351    CGGCCAGGAGCACACGCTGGGTGACTTCGACGGCAACCTGGAGGACGCAC
401    TGGGCCGCATCCTCGCCGAGGAGCAGAACGCCGGCTGA.

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3. The method according to claim 1 or 2, wherein said additional *SsgA*-activity is provided by transfecting or transforming said filamentous bacterium with additional genetic information encoding said activity.

4. The method according to claim 3, wherein said additional genetic information comprises an ssgA gene or a derivative or fragment thereof encoding similar SsgA-activity.
5. The method according to claim 4, wherein said ssgA gene is derived from an actinomycete.
6. The method according to claim 4, wherein said gene is derived from a streptomycete.
7. The method according to claim 5, wherein said gene is derived from *Streptomyces griseus*, *Streptomyces collinus*, *Streptomyces albus*, *Streptomyces goldeniensis* or *Streptomyces netropsis*.
8. The method according to any one of claims 3-7, wherein said additional genetic information is integrated into the bacterial genome.
9. The method according to any one of claims 3-8, wherein said additional genetic information is part of an episomal element.
10. The method according to any of the foregoing claims, wherein said filamentous bacterium does not have significant endogenous ssgA-activity.
11. The method according to any one of the foregoing claims wherein said ssgA-activity is inducible or repressible with a signal.
12. The method according to any one of the aforementioned claims wherein said filamentous bacterium is an Actinomyces.
13. The method according to claim 12, wherein said bacterium is a Streptomyces.
14. The method according to any one of the foregoing claims wherein said filamentous bacterium produces a useful product.

15. The method according to claim 14 wherein said useful product is an antibiotic.
16. The method according to claim 14, wherein said useful product is a protein.
17. The method according to claim 16 wherein said protein is heterologous to said bacterium.
18. The method according to claim 16 or 17, wherein said protein is expressed from a vector encoding said protein present in said filamentous bacterium.
19. The method according to claim 16, 17 or 18, wherein said protein is secreted by said filamentous bacterium.
20. A filamentous bacterium obtainable by a method according to any one of the foregoing claims.
21. The filamentous bacterium of claim 20, wherein said bacterium is an actinomycete, preferably a Streptomyces.
22. A method for producing an antibiotic or a useful protein comprising culturing a filamentous bacterium according to claim 19 or 21 and harvesting said antibiotic or protein from said culture.
23. The method according to claim 22 wherein said culturing is submerged culture.